

**REMARKS**

The Examiner allowed claims 3, 5, 6, 13, 15, 16 and 20. Applicants gratefully acknowledge the Examiner's indication of allowable subject matter.

The Examiner objected to claims 21, 22, 24 and 27.

The Examiner rejected claims 23 and 26 under 35 U.S.C. §102(b) as allegedly being anticipated by US 5,519,176 (Goodman).

The Examiner rejected claims 1, 2, 4, 7-12, 14, 17-19, 25 and 28 under 35 U.S.C. §103(a) as allegedly being unpatentable over US 5,519,176 (Goodman) in view of US 6,433,286 (Dobrenz).

Applicants respectfully traverse the §102(b) and §103(a) rejections with the following arguments.

**35 U.S.C. §102(b)**

The Examiner rejected claims 23 and 26 under 35 U.S.C. §102(b) as allegedly being anticipated by US 5,519,176 (Goodman).

**Claim 23**

Applicants respectfully contend that Goodman does not anticipate claim 23, because Goodman does not teach each and every feature of claim 23.

As a first example of why Goodman does not teach each and every feature of claim 23, Goodman does not teach the feature: "forming an opening in the first metal voltage plane such that a first electrically conductive strip across the opening includes an image of a first portion of the metal signal line, wherein the image of the first portion of the metal signal line projects across the opening in the first metal voltage plane" (emphasis added).

The Examiner argues that in FIGS. 4A-C of Goodman, reference numeral 12 represents the signal line, reference numeral 14 represents the first metal voltage plane, and reference numeral 14C represents the first electrically conductive strip.

In response, Applicants contend that FIGS. 4A-C of Goodman show that the first electrically conductive strip 14 across an opening in the voltage plane 14C does not include an image of any portion of the signal line 12, as required by claim 23. In fact, a visual inspection of FIGS. 4A-C of Goodman makes it clear that wherever strip 14 exists across an opening, strip 14 does not include an image of signal line 12.

As a second example of why Goodman does not teach each and every feature of claim 23, Goodman does not teach the feature: "wherein step of laminating the first metal voltage plane to the first surface of the dielectric substrate is performed before the step of forming the opening in the first metal voltage plane"

The Examiner argues that Goodman, col. 7, line 60 - col. 8, line 10 teaches the preceding feature of claim 23.

In response, Applicants contend that the Examiner has improperly applied Goodman, col. 7, line 60 - col. 8, line 10. Applicants assert that Goodman teaches three independent Examples as follows.

Example 1 of Goodman relates to FIGS. 3-5 using the fabrication method described in col. 6, lines 1-41.

Example 2 of Goodman relates to FIGS. 6-7 using the fabrication method described in col. 7, line 60 - col. 8, line 24.

Example 3 of Goodman relates to FIGS. 8-9 using the same fabrication method as is used in Example 1 (see Goodman, col. 9, lines 39-43).

However, the Examiner has applied the fabrication method of Example 2 to Example 1 in order to argue that Goodman teaches the preceding feature of claim 23. Applicants maintain that Goodman does not teach anywhere that the fabrication method of Example 2 can be used to fabricate the electrical structure of Example 1. Indeed, Goodman, col. 6, lines 1-41 specifically identifies a fabrication method for Example 1.

Based on the preceding arguments, Applicants respectfully maintain that Goodman does

not anticipate claim 23, and that claim 23 is in condition for allowance.

Claim 26

Applicants respectfully contend that Goodman does not anticipate claim 26, because Goodman does not teach each and every feature of claim 26.

As an example of why Goodman does not teach each and every feature of claim 23, Goodman does not teach the feature: "forming an opening in the first metal voltage plane such that a first electrically conductive strip across the opening includes an image of a first portion of the metal signal line, wherein the image of the first portion of the metal signal line projects across the opening in the first metal voltage plane" (emphasis added).

The Examiner argues that in FIGS. 4A-C of Goodman, reference numeral 12 represents the signal line, reference numeral 14 represents the first metal voltage plane, and reference numeral 14C represents the first electrically conductive strip.

In response, Applicants contend that FIGS. 4A-C of Goodman show that the first electrically conductive strip 14 across an opening in the voltage plane 14C does not include an image of any portion of the signal line 12, as required by claim 23. In fact, a visual inspection of FIGS. 4A-C of Goodman makes it clear that wherever strip 14 exists across an opening, strip 14 does not include an image of signal line 12.

Based on the preceding arguments, Applicants respectfully maintain that Goodman does not anticipate claim 26, and that claim 26 is in condition for allowance.

**35 U.S.C. §103(a)**

The Examiner rejected claims 1, 2, 4, 7-12, 14, 17-19, 25 and 28 under 35 U.S.C. §103(a) as allegedly being unpatentable over US 5,519,176 (Goodman) in view of US 6,433,286 (Doberenz).

**Claims 1, 2, 4, 7-12, 14, and 17-19**

Applicants respectfully contend that claims 1 and 11 are not unpatentable over Goodman in view of Doberenz because Goodman in view of Doberenz does not teach or suggest each and every feature of claims 1 and 11, each and every feature of claims 1 and 11.

As a first example of why Goodman in view of Doberenz does not teach or suggest does not teach or suggest each and every feature of claim 23, Goodman in view of Doberenz does not teach or suggest the feature:

“a first metal voltage plane laminated to a first surface of the dielectric substrate, wherein the first metal voltage plane includes an opening, wherein an image of a first portion of the metal signal line projects across the opening in the first metal voltage plane, wherein a first electrically conductive strip across the opening in the first metal voltage plane includes the image of the first portion” (claim 1); and

“forming an opening in the first metal voltage plane such that a first electrically conductive strip across the opening includes an image of a first portion of the metal signal line, wherein the image of the first portion of the metal signal line projects across the opening in the first metal voltage plane” (claim 11).

The Examiner argues that in FIGS. 4A-C of Goodman, reference numeral 12 represents the signal line, reference numeral 14 represents the first metal voltage plane, and reference numeral 14C represents the first electrically conductive strip.

In response, Applicants contend that FIGS. 4A-C of Goodman show that the first electrically conductive strip 14 across an opening in the voltage plane 14C does not include an image of any portion of the signal line 12, as required by claim 23. In fact, a visual inspection of FIGS. 4A-C of Goodman makes it clear that wherever strip 14 exists across an opening, strip 14 does not include an image of signal line 12.

As a second example of why Goodman in view of Dobrenz does not teach or suggest does not teach or suggest each and every feature of claim 23, Goodman in view of Dobrenz does not teach or suggest the feature: "wherein the opening in the first metal voltage plane has an outer boundary whose shape is circular or elliptical".

The Examiner argues that "it is well known in the art to form circular opening in voltage planes underlying signal lines as evidenced by Dobrenz (see figure 4). Therefore, it would have been obvious, to one having ordinary skill in the art, at the time of invention, to form circular openings in the voltage plane of Goodman as is well known in the art and evidenced by Dobrenz. The motivation for doing so would have been to match the impedance of the signal pattern."

In response, Applicants contend that the Examiner's argument to modify Goodman by having a circular opening in the first metal voltage plane (i.e., "to match the impedance of the signal pattern") is not persuasive, because:

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1) the Examiner's argument is ambiguous, since because the Examiner has not identified "the signal pattern" (i.e., lack of antecedent basis);

2) the Examiner has not identified what the alleged signal pattern is to be matched against; and/or

3) the Examiner has not cited any evidence from the prior art to show that having a circular opening in the first metal voltage plane would enable matching the impedance of the signal pattern as compared with having a non-circular opening in the first metal voltage plane.

Based on the preceding arguments, Applicants respectfully maintain that claim 1 is not unpatentable over Goodman in view of Doberenz, and that claim 1 is in condition for allowance. Since claims 2, 4 and 7-10 depend from claim 1, Applicants contend that claims 2, 4 and 7-10 are likewise in condition for allowance. Since claims 12, 14 and 17-19 depend from claim 11, Applicants contend that claims 12, 14 and 17-19 are likewise in condition for allowance.

In addition with respect to claims 7, 10, 17, and 19, Goodman in view of Doberenz does not teach or suggest the feature: "wherein the signal current is an alternating current". Goodman does not disclose anywhere that a signal current through the metal signal line 12 is an alternating current.

#### Claims 25 and 28

Since claims 25 and 28 depend from claims 23 and 26, respectively, which Applicants have argued *supra* to not be unpatentable over Goodman under 35 U.S.C. §102(b), Applicants

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1) the Examiner's argument is ambiguous, since because the Examiner has not identified "the signal pattern" (i.e., lack of antecedent basis);

2) the Examiner has not identified what the alleged signal pattern is to be matched against; and/or

3) the Examiner has not provided any evidence show that it was known in the prior art to form circular openings in the voltage plane to match the impedance of the signal pattern.

Based on the preceding arguments, Applicants respectfully maintain that claim 1 is not unpatentable over Goodman in view of Doberenz, and that claim 1 is in condition for allowance. Since claims 2, 4 and 7-10 depend from claim 1, Applicants contend that claims 2, 4 and 7-10 are likewise in condition for allowance. Since claims 12, 14 and 17-19 depend from claim 11, Applicants contend that claims 12, 14 and 17-19 are likewise in condition for allowance.

In addition with respect to claims 7, 10, 17, and 19, Goodman in view of Doberenz does not teach or suggest the feature: " wherein the signal current is an alternating current". Goodman does not disclose anywhere that a signal current through the metal signal line 12 is an alternating current.

#### Claims 25 and 28

Since claims 25 and 28 depend from claims 23 and 26, respectively, which Applicants have argued *supra* to not be unpatentable over Goodman under 35 U.S.C. §102(b), Applicants maintain that claims 25 and 28 are likewise not unpatentable over Goodman in view of

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Doberenz under 35 U.S.C. §103(a).

In addition, Goodman in view of Doberenz does not teach or suggest the feature: "wherein the opening in the first metal voltage plane has an outer boundary whose shape is circular or elliptical".

The Examiner argues that "it is well known in the art to form circular opening opening in voltage planes underlying signal lines as evidenced by Doberenz (see figure 4). Therefore, it would have been obvious, to one having ordinary skill in the art, at the time of invention, to form circular openings in the voltage plane of Goodman as is well known in the art and evidenced by Doberenz. The motivation for doing so would have been to match the impedance of the signal pattern."

In response, Applicants contend that the Examiner's argument to modify Goodman by having a circular opening in the first metal voltage plane (i.e., "to match the impedance of the signal pattern") is not persuasive, because:

1) the Examiner's argument is ambiguous, since because the Examiner has not identified "the signal pattern" (i.e., lack of antecedent basis);

2) the Examiner has not identified what the alleged signal pattern is to be matched against; and/or

3) the Examiner has not provided any evidence show that it was known in the prior art to form circular openings in the voltage plane to match the impedance of the signal pattern.

**CONCLUSION**

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below. The Director is hereby authorized to charge and/or credit Deposit Account 09-0457.

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